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Enhancing fieldwork learning experiences for the architectural conservation curriculum

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Abstract (250 w)

Fieldwork in architectural conservation education is a proven practice to develop skills in documenting current conditions and start rich methodological engagements with a site's architectural, cultural and historical values. Moreover, it generates intensive learning experiences, either in comprehensive degrees or short courses. Review of the practice within conservation education is not extensive so this paper reflects on how fieldwork pedagogies can be enhanced further. This reflection was triggered by a major case study, a workshop aiming to generate conservation UG teaching capacity for a school of Architecture in Colombia. The strong engagement of students and tutors, and their commitment to make heritage meaningful to their future projects is a measure of this pedagogy's success. This led to the mapping of the fieldwork spectrum through the authors' experiences in PG courses and external workshops, as also activities planned in other MSc programmes. Often fieldwork is seen as training in skills so enhancements are then explored from the affiliated Geography and Architecture UG curricula, where they are essential activities: inspired by their closer engagement with sites, conservation students can be induced into critical inquiries by being motivated to develop their own personalised contexts and enhance engagement with the unexpected through inversion of linear learning processes or student-led data collection. It is further suggested that setting up transverse site exercises at the beginning of PG programmes can encourage students' curiosity in exploring historic environments and contextualise surveying methods.

Structured abstract

Purpose: Fieldwork in architectural conservation education is a proven practice to develop skills in documenting current conditions and start methodological engagements with a site's architectural and historical values. It is a vehicle to generate intensive learning experiences in comprehensive degrees or short courses. Review of the practice within conservation education is not extensive and this paper reflects on enhancing pedagogy further.

Design/ methodology: This reflection was triggered by a major case study, a workshop to generate UG teaching capacity for an Architecture school in Colombia. This led to mapping the fieldwork spectrum, reviewing the authors' experiences (PG courses, external workshops)

and activities planned in other MSc programmes. Fieldwork is often seen as skills training, so enhancement is explored through the affiliate Geography and Architecture UG curricula.

Findings: The Colombia workshop provoked strong engagement among students and tutors, and their commitment to make heritage meaningful to their projects is a measure of this pedagogy's success. Fieldwork around a site's essence, beyond skills development can induce conservation students into critical inquiries by motivating them to develop personalised contexts and enhance engagement with the unexpected through inversion of linear learning processes. Setting up site exercises early on PG programmes can encourage curiosity in exploring historic environments and contextualise surveying methods.

Research limitations: Student reaction to these ideas has still to be tested by designing new activities. The educational methods of this implementation need deeper analysis, beyond the paper's scope.

Originality/ value: The paper maps the academic value of fieldwork in conservation education, investigating enhancement and cross-fertilisation from Architecture and Geography.

Highlights

Reflection on fieldwork in conservation training activities as a spectrum of student guidance

Enhancement of fieldwork inspired by the Architecture and Geography curriculum can promote direct, experiential and transformative activities, beyond technical skills, open to the unexpected

Fieldwork can improve conservation students' ownership of their learning and their progression as autonomous investigators

Value of introducing short intensive fieldwork at the UG Architecture and the PG conservation curriculum

1. Introduction

Fieldwork in conservation education is the widely proven method to develop skills in surveying the geometry, pathology or urban condition of a site, but also a vehicle to kick-start a methodological moment for engaging with existing architecture [6] [8] [35] and prop curiosity for a building's nature. Most conservation programmes have no special relevant pedagogy, using mainly its basic function as data collection and site appraisal for coursework, and reflection on fieldwork's value and practices is fragmented [38]. This paper explores how its critical inquiry can develop further and students can not only learn more deeply by practicing but also have enhanced learning experiences by being open to uncertainty and disruption, changing their practices of observing, analysing and synthesizing [25].

The trigger for this reflection was a workshop organised by academics from Architecture (ESALA) and Geosciences at Edinburgh University (supported by the British Council) to generate sustainable teaching capacity for an architecture school in a remote, segregated

area in Colombia. Fieldwork was seen as a pragmatic learning activity, given the workshop's short period, and the "Conservation Technology" coursework from the long-established MSc in Architectural Conservation at ESALA, Edinburgh College of Art (ECA) [37] was adapted, focusing on a repair or design intervention supported by a measured and condition survey of a neglected local heritage. The workshop generated strong engagement and increased awareness of this heritage among students and tutors, and this encouraged the authors to review fieldwork as pedagogy in conservation and its enhancement. This is done by discussing further evidence from similar short/ intensive exercises along more sustained, longer PG courses in Edinburgh and Europe.

Many educators agree that restoration specialists need to learn to develop a critical capacity, beyond the appraisal of technical characteristics or environmental data of a site [28], and the paper explores Architectural Design learning where engagement of students with a site is deep and driven by a project concept, genuinely open to less certainties. Linear knowledge transmission is inverted, making learning contextual and richer, leading to earlier ownership and confidence in dealing with the unexpected, a particularly useful attitude in conservation. Enhancements are further sought in the Geography curricula where students actively learn how to see the existing or study people, their cultures and their link to patterns in the natural environment, defining their development as investigators [18], as the many unexpected findings can further nourish curiosity and critical inquiry.

The workshop in Colombia demonstrated that a basic UG preparation in contemporary architectural technology can help the implementation of specialist conservation skills especially when they relate to building fabric. Interacting with heritage in design courses can nourish the creative stimulus with clues like decay, resilience, stratification, destruction, testimony of human interaction, memory etc [7]. A secondary aim in this paper is therefore reflection how this critical interaction can be a refreshing experience within an UG Architecture curriculum, which promotes longer engagements.

2. The conservation curriculum and fieldwork learning

Fieldwork has always been an integral part of conservation education and is primarily encountered in the core courses of a typical curriculum (surveying and building analysis, technology, urban conservation, construction history) [28]. It has been associated first with building archaeological research (a fundamental approach in countries like France to ascertain the authenticity and importance of key features), especially from early 20th century when it entered the practice of professional restorers. The Chaillot School in Paris for example (founded in 1887 alongside the designation of "monuments historiques" in France) brought a more practical direction in rupture from Beaux-Arts purely artistic education.

Conservation training was further instituted as the field was being defined at various stages in many countries and this resulted in the academic organisation of its taught courses and also fieldwork. Such stages were the large scale restorations after the two World Wars, the first theoretical texts and the creation of international charters (especially Venice), and schools like the Scuola di Specializzazione in Sapienza (1957) and ICCROM (early 1960s), ECA/ ESALA in Edinburgh (1977) or the Lemaire Centre in Leuven (1976), marked the parallel growth in the academic identity of the sector in terms of teaching and research.

The international institutes set up in that period promoted fieldwork in a holistic way across the broader context of conservation training. For example ICOMOS guidelines [25] mention that "conservation requires the ability to observe, analyze and synthesize" (pts 4, 5) and this is reflected on the attributes of conservation professionals, like those by IHBC "pt 4: Research,

recording and analysis” or COTAC in the UK. ICCROM took a leading role in offering short training programmes and they always included field exercises, which influenced the international agenda [28].

Conservation programmes in Europe are primarily postgraduate and fieldwork has become an over-arching pedagogical method to unify and generalise an intensive learning experience of diverse cohorts of very focused students. PG context means higher degree of complexity and depth in learning, first steps in a learner’s research autonomy and abstraction [42]. Many professional and craft skills are involved, so conservation is taught in a self-contained, holistic interdisciplinary environment, which ultimately aims to enhance the students’ cultural consciousness and sensitivity [25] [28]. Moreover, these students come from an increasing variety of academic fields beyond Architecture, as recruitment at the MSc in ESALA shows. Moreover, most PG conservation programmes have gained a strong status and network in the field, and are usually located in cities with rich architectural heritage, which makes fieldwork rewarding.

All of the broader training panorama includes a degree of fieldwork. In the academic sector this supports coursework in programmes with comprehensive training (e.g. ESALA [47], Sapienza, ETSA Madrid, Leuven, Bamberg), but becomes more experiential in those that draw from specialisms (sustainable heritage in the Bartlett) or promote the widest possible mix of pathways (York). The fieldwork ethos of Architecture education also informs conservation-led design units, specialist modules or pathways in UG programmes. This pedagogy becomes even more central and effective in short summer courses, volunteering in conservation sites (like REMPART), specialist skills training (Scottish Lime Centre) or independent international training programmes (ICCROM).

Specialist conservation courses or pathways are offered in UG architecture programmes in countries, with other countries attempting it too as part of the European higher education integration [38]. Examples are the Part 2 design programme Laurea Magistrale in Architettura (Restauro) in Rome Sapienza [32] or programmes with stronger focus on science & technology (Germany, Politecnico di Milano). An implicitly common aspect with design implications is that students deal on a 1-1 scale with an existing building, away from the simulated environment of a design studio where new buildings are created. Rich historic environments like Edinburgh can also offer complex prompts for UG design projects beyond a specific conservation pedagogy, like decay, resilience, fragmentation, stratification, destruction, testimony of human interaction, memory, split identity etc. [7], as the briefs of many Design units at the MA Architecture in ESALA show.. Fieldwork is a typical activity in those stages, focusing learning and engagement, creating quickly also a sense of cohort.

Fieldwork in conservation introduces students into understanding architectural heritage within its local reality, which can be cross-referenced with architectural education and framed as “context” that extracts, positions and articulates these critical relations in a project [13]. Fieldwork is essential for courses where students learn skills (surveying, building analysis) or collect data (urban conservation, technology). Some PG schools offer long field-trips abroad that explore conservation practice elsewhere (ESALA, Leuven) or intensive specialist workshops like archaeological excavation, restoration work or traditional construction (Sapienza, York, NTU Athens). Multi-disciplinarity is sometimes practised through fieldwork supporting group design projects, reflecting the composition of teams in professional projects (ETSA Barcelona, Leuven, ICCROM) [15].

Little reflection has taken place on the value and specific practices of fieldwork, like in the EAEE educational forums [38]. The current learning experience is highlighted by the case studies that follow and its broadening will be investigated afterwards through pedagogy from

architectural and geography education as the two most affiliate areas. Reference to archaeology is of less use as fieldwork there teaches very pertinent practice skills.

3. Case studies

3.1. *A workshop for an UG curriculum abroad*

This opportunity for a pedagogy reflection rose from the Land Use Planning Challenges [30] collaborative project of the University of Edinburgh, set up to understand local practices and inter-sector relations mediated by land use change in the city of Quibdó, Colombia. One of the aims was to evaluate processes in housing as they were adapted to the social and climatic conditions in the city [34], so following a first workshop on relevant socio-economic and environmental impacts, conservation was seen as the next step to understand the historic dynamics and enhance local practices. A further workshop was proposed, firstly to enhance teaching capacity in conservation at the UG programme in Architecture of the city's Universidad Tecnológica del Chocó (UTCh) [51] and strengthen the engagement of students with their local context, and then to set a platform for creative collaboration with civil society organisations and local authorities.

The "Conservation Technology" coursework from the MSc in Architectural Conservation in ESALA [37] was adapted, focusing on a neglected and fragmented yet highly significant heritage, timber stud-frame houses of late 19th century. This architecture was identified as a witness of the processes that created and transformed the city and its social and built fabric [1] [11] [21] [22]. Some were built on stilts over torrents which would be later contaminated so their areas became thresholds and slums that require regeneration [34]. The tutors at UTCh indicated finalist students as the appropriate learners and fieldwork was seen as a strongly engaging activity. For the authors, this was seen an opportunity to test aspects of UG conservation learning and assess the cultural exchanges that take place when established pedagogies are transposed into a very different environment, even from a decolonial perspective. The timber heritage's significant technical and cultural characteristics will be discussed in a different publication.

The UTCh architecture programme was established in 1997 so it is relatively young and can be a recipient of innovation from current trends. The curriculum ("*pensum*") is defined as an 'integrating structure of disciplines', delivered through a variety of learning outcomes, professional and transferable skills, teaching strategies and methods of assessment. The programme aims to respond to the architectural necessities of the local and national community by promoting the students' humanistic and academic development [51].

There are four main subject groups (design, technology, history & theory, professional practice), rather typical according to international professional curriculum trends, and electives (urbanism and environment, social housing, advanced technology, sustainability) count for 25% of the total credits. In the higher years, the programme moves into design research projects led by the tutors' interests and expertise (Architecture and Habitat; Bioclimatic Architecture; Urbanism and Territorial Development). The response to the 'local conditions and particularities' that the programme promotes appears to be variable. One design unit for example focuses on high-rise housing that responds little to any local context and the city's many problems with basic services such as sanitation. Other projects develop in sites away from the city, probably not seeing design potential in the current urban areas.

The programme therefore could profit by responding more to local climate conditions, historic preservation or natural construction materials, as also teaching students surveying skills.

Promoting conservation can help balance the effect of some utopic yet trendy design projects, making students reading properly the local context and making architectural propositions that respond to an imperative necessity of sustainable solutions, in a more integral way than optional courses. As there are no PG taught or research programmes and little research is done independently from teaching or funded (timber, bioclimatic architecture, habitat), injecting a subject with stronger local roots could nourish the academic environment in a more organic way.

Choosing an appropriate type of fieldwork is fundamental for the learning acquisition process and a combination of different types could be more effective in some geographical contexts [18] [29]. Following the objective in nourishing heritage skills and awareness for the UG students and their educators too, an observational participatory staff-guided fieldwork was considered as appropriate, which is an intermediate between a staff-led project and independent, group project work. This may embed fieldwork more explicitly into an inquiry- or problem-based curriculum [41] and promote co-learning models [33] [19].

While some of these aspects became clearer during the workshop, the planning stage aimed to an exercise to enhance the student's sensitivity and skills to read their historic environment and engage them through direct physical experience [46]. The students were divided into groups of 10, each group given two buildings to survey, document and analyse, followed by a conservation proposal. Most of these timber buildings are isolated now within a late 20th century built environment, so the students could develop new, personal and design-led geographies, beyond emulating the few scholar publications [11] [21] [22]. It was also planned as an opportunity to implement knowledge imparted in short lectures in the first day, following initially a rather linear pattern of learning. Other learning outcomes in line with the research project [30] were the development of social responsibility of the students through higher awareness of heritage and its role in the urban character of the city. Reflection on past building techniques that are more based on craftsmanship may influence their own design methods and expand the context they would usually work.

The city is located along the navigable river Atrato, which enabled commerce and cultural links to Panama and the Caribbean, so became the capital of the region of El Chocó since 1770, an area immersed in the Pacific jungle and rich in minerals. Timber buildings characterised the city since its major development from 1876, in a typology imported from the Caribbean, often in sawn timber from the area [11] [22]. This produced gradually complex 2-story buildings, with advanced construction techniques (stud frames, roof trusses, wall plates, openings frames) and expressive features like eaves and balconies in timber or metal. Balloon frames were initially popular due to the availability of *Guayacan* (araguaney), a local hardwood that produces durable trunks suitable as long posts. The city's fabric currently is in concrete and brickwork, following modernisation and the effect of a major fire in 1966 (Fig. 1). Most of the timber houses that survived show overlapping horizontal board construction, with no insulation, while some are plastered. They are roofed or even clad in lightweight materials like zinc corrugated sheets to replace the historic impermeable palm-leaves roof (*chonta*) as the city has one of the highest rainfalls in the world.



Figure 1: Panorama of Quibdó from the North, showing typical houses and the main monumental buildings (Cathedral, banks, Diocese)



Figure 2. Fieldwork on timber houses in Quibdó: key characteristics in the very well preserved Casa Copete (Carrera 5 & Calle 27) and the UTCh students during condition survey at neighbouring Casa García.

Preparation of the workshop was done mostly in Edinburgh, with the use of key historic texts [11] [21] [22]. The Streetview® service by GoogleMaps was essential for the familiarisation with the building types and urban scale of the city, further supported later by a visit by the second author. A brief was issued, summarising the tasks for the students and tutors, supported by readings on historic timber techniques [50] and pathology [31]. 6 out of almost 15 preserved timber houses were selected (Fig. 2), based on condition and accessibility.

The workshop run for five days (24th - 28th April 2017). On Day One, the programme was presented and the students were divided into groups. Then lectures followed on architectural preservation and pathology of timber (by the first author); insight on the historical buildings and the urban development of Quibdó (Douglas Cujar, an architect expert on the architecture and urban history of the area); research on housing typologies on dry and flooding planes in Chocó (Johana Lozano, the local partner leader and director of the UG architecture programme, with her students).

Day Two started with a visit to the principal landmarks of the city (Fig. 1), the Roman Catholic cathedral of St Francis (built 1946-79) and the Diocese House (1931-42) and the students then spent the rest of the day surveying their buildings (Fig. 2).

Analysis started already on Day Three, as the students had managed to survey well their buildings in the previous day, which allowed them more time to process the data working at the school with their tutors. Further analysis carried on in Day Four and in the afternoon, the groups presented their analysis and proposals over posters. The owners of the houses studied were invited to the review, and especially the owner of Casa Medina stirred a very meaningful discussion about the importance of preserving timber buildings in Quibdó. The students' response to the exercise was very engaging and the reviews showed clear links between the quality of surveying and the depth of the analysis.

The posters were to be presented on Day Five to the local authorities (City planning office, CODECHOCO, Gobernación del Chocó) and timber saw-millers, but few of them appeared at the round table, so the discussion was mainly academic, limiting the possibilities of the workshop insight to make an immediate impact on civic proceedings. This however raised awareness on how conservation can enhance the holistic approach of the architectural curriculum. Various points were made about the consciousness of this timber heritage among owners, specifically (Casa Medina) or broadly (awareness of technical performance and cultural significance of regional materials like Guayacán for posts or palm (*chonda*) for waterproof roofs). The lack of joiner skills and the need to highlight the culture of regional materials more in the Technology courses were raised. Making heritage alive and meaningful became a very strong statement by some students, expressing the need to use the city centre as laboratory for their studies. It was broadly manifested by all participants that research should focus on the history of the city and the region, actualised with study of the new characteristics being created at the fringes of the city where house construction on stilts (*casas palafíticas*) become current practice for communities displaced from the region due to the armed conflict or the relationships of the new housing suburbs built for these communities with the city centre.

The workshop demonstrated through the review, discussions and feedback from a few students that a basic UG preparation in contemporary architectural technology can help specialist conservation skills to be absorbed more effectively as building fabric can be better understood. The quality of reading of the buildings surveyed varied, but more students produced a comprehensive analysis rather than missing obvious areas and this spectrum of response to survey data showed that cultural or technical preconceptions can be side-lined during such activities.

3.2. Short intensive activities

The workshop learning experience can be framed in the pedagogy spectrum within independent intensive design exercises. Such exercises prove a successful vehicle for study trips abroad, as the MSc in ESALA has organised for visiting groups from Bordeaux, Montreal or Bamberg recently. These joint design charettes were set up conveniently within the World Heritage course [54] as a test of the impact of new design within the attributes of the world heritage designation of Edinburgh's Old Town. The introductory talks to the week-long programme were chosen to give a less conventional context to the city's conservation trends, aiming towards a broader range of responses and engagement from both resident and guest cohorts.

Summer schools are popular learning activities and they are more effective in their short duration when they include fieldwork. The first author draws direct insight from the one

organised for a few years in Tor Vergata University Rome [48], an intensive 2-week introduction to conservation theory and technology for circa 25 participants, primarily Engineering or Architecture graduates, with classes and site-visits. A design exercise towards the end of the programme aimed to let the participants understand the complexities in the recording, analysis, decision making and execution of conservation projects. The project in 2010 was an especially rich learning experience. The site was the S façade of the monastery of St. Frances at the E end of Rome's Forum, whose rich stratification due to centuries of continuous alterations since the 3rd century BC provided strong inspiration for a contemporary critical design approach towards its presentation as a historic palimpsest.

The students showed strong engagement and complex response during the final project review. Most of the fields covered in the lectures fed into the survey and analysis of the site, and were fully explored in the proposals, making an experiential use of real data [18]. This exercise was based on focused site inquiry and the students recorded many inter-disciplinary aspects beyond geometry and pathology, while no historical research was needed as extensive material was given. The site's fragmented appearance prevented the students from immersing into the values of any particular period and diverting their motivation for learning, and working on a design project expected an original critical interpretation, making no pretence for an unmediated experience .

A similar learning project saw fieldwork as the right vehicle for more professional explorations and exchanges. The first Russian-Italian school of conservation was set up as an exchange of practice and pedagogies between academic institutions and professionals in Rome and Moscow [3]. The participants had an intensive lecture programme in the two cities and a final design workshop in the ruined wing of the Schusev Architecture Museum in Moscow. The high level of support by the two countries' foreign trade institutes was fundamental for this experience and enabled the participants' immersion into the philosophy and practice of either country, moving the agenda beyond training into the establishment of international professional links.

3.3. Fieldwork in academic PG programmes

Reviewing a range of manifestations of fieldwork within MSc degrees shows how its ethos can expand in longer, 2-semester scales. In comprehensive taught programmes without a design focus like the MSc in ESALA [37] [47] fieldwork is the method for site data collection and Edinburgh region's rich heritage makes the motivation stronger. Fieldwork develops skills at the course "Building analysis" (semester 1) and then applications in "Conservation technology" (semester 2). The essential surveying techniques are taught in the former, in a variety of methods, and then applied to the analysis of a building with multiple historical phases. In the latter course [9] the pathology of traditional or modern materials is surveyed on a case study, followed by a repair proposal. Since not all students come from technical backgrounds, these skills are developed through short field exercises, classroom workshops and visits, planned early in the semester. The increasing number and intensity of these activities has made the experiential bridge between lectures and real problems stronger, as also the connections within the extensive and diverse taught material. This resulted in improved integrated knowledge, critical inquiry and confidence on site, which shows in the students' stronger understanding of case studies and course performance.

This guided learning experience becomes more student-led and creative at the Urban Conservation course [52] which reviews the historic built environment in its totality rather than an agglomeration of specific buildings. The 2nd semester project asks students to analyse and make conservation recommendations for an urban area in collaboration with a local authority. The students are purposely not introduced initially to the character of the site or the intentions

of the local authorities. Such background could dominate their criteria and analysis, and stir outcomes towards policy and current initiatives, reinforcing some preconceptions that only local authorities' needs should drive regeneration. This pedagogy aims to a balanced yet stronger immersion of the students in the field, making them more open to discovery and conscious that experiencing a site is never unmediated [39]. Such attitudes are of growing importance as more conservation projects are based on the engagement of communities, who ideally should go through similar learning experiences.

Other programmes define a clearer path from a theoretical framework to project-led education and at the MSc in RLICC Leuven [43] this culminates into the Integrated Project Work in semester 2. Interdisciplinary groups of students are formed to collaborate on a site in Belgium, which has been surveyed and analysed from semester 1 across the theoretical modules. An intensive 2-week workshop abroad on specific themes strengthens further the students' professional practice preparation. Such immersive experiences are highly appreciated by students and engagement with sites, their values and local community can be more intensive through comprehensive survey and building archaeology/ *Bauforschung*, as it is practised at residential workshops at NTU Athens. These often happen in collaborations with visiting student groups, like from Ecole de Chaillot, where a field-trip abroad and a major site project are fundamental in the school's mission to form professionally accredited conservation architects.

4. Fieldwork pedagogy in related disciplines

4.1. Architecture

In architectural education, mapping and interpreting information from a site has moved from objective recording into close engagement with a site's character and this is achieved through field-trips of various duration. ESALA for example [2] moves from simple recording of the fundamentals of architecture in Design Elements in Year 1 to mapping the essence of an area in Year 2 (in an almost Situationist wandering in Valencia for example [5]). Representing Year 3 pedagogy, one unit asks students to collect their own digital data-streams throughout Edinburgh's Old Town to develop design techniques that acknowledge the multiplicity of individual agencies and subjectivities that underpin modern city life [40]. Site engagement becomes more complex at the MArch degree (Part Two): a unit for example created firstly environmental models in the controlled conditions of their studio that became later instruments to design buildings when the responses simulated were contextualised in the real and extreme environment of Iceland [36]. Such approaches to "seeing", "knowing" and eventually "working" with the existing through field/work practices have the further potential to transform the observer by "breaking" habits and skills and creating new ones [13], similar to Geography as will be seen below.

These fieldwork pedagogies can be framed historically as a spectrum of choices of learning, as S. Ewing reviewed [14], starting with individual ones from a public canon of architectural knowledge during Grand Tour itineraries, moving to teacher-led choices from mid 20th century as this canon becomes dispersed and contested. International visits have shifted from Eurocentric cultural sites to a global field of contested urban futures and this is reflected on the move from Rome (cultural artefacts), to Paris and Berlin (public encounters), Los Angeles and Las Vegas [53] (urban reality), up to cities with less visible social and cultural dimensions (Lagos). This aligns with the move of the design studio in the 1980s from problem-solving to problem-setting and the establishment of architectural theories more relevant to late 20th-century society.

4.2. Geography

Human Geography can be considered as a sibling academic discipline, which similarly promotes “learning while doing” in real-world scenarios. Fieldwork has been established as a mandatory activity for Geography education in England and Wales for example since the 1990s [16] and “Geography without fieldwork is like science without experiments”. It is seen as a fundamental pedagogical tool that permits students to confront theoretical perspectives with real life settings and its importance is constantly evolving in the Geography curriculum (Figs 3 and 4) [20], [46], [16], [17], [19], [18], [29].

Date	Approach
1950	Traditional 'look-see' or 'Cook's tour' field courses <ul style="list-style-type: none"> ♦ observational and descriptive ♦ 'landscape' - based or centred on 'sight-seeing' visits
1960	to specific sites of interest in geography <ul style="list-style-type: none"> ♦ passive student participation
1970	'New' Geography - 1960s 'revolution' Problem-orientated, project-based fieldwork <ul style="list-style-type: none"> ♦ inductive and deductive approaches (positivist) <ul style="list-style-type: none"> hypothesis generation and testing, data collection and statistical analysis, interpretation and report writing
1980	♦ detailed scales, often carried out in a small area <ul style="list-style-type: none"> ♦ active student participation although often staff-led
1985	Enterprise in Higher Education - Transferable skills Problem-orientated fieldwork still dominant but introduction of transferable skills element <ul style="list-style-type: none"> ♦ project design skills ♦ organisational skills ♦ leadership skills ♦ group skills ♦ active student participation but emphasis switches from staff-led to student-led projects
	Thematic and guided trails <ul style="list-style-type: none"> ♦ individual student initiative ♦ group initiatives ♦ feedback on completion
1990	Massive growth in student numbers - teaching large classes <ul style="list-style-type: none"> ♦ Field courses incorporate elements of all previous modes of fieldwork ♦ may commence with 'look-see' perhaps combined with thematic guided walks/trails ♦ followed by staff-directed, problem-orientated projects ♦ then student-initiated problem-centred work with added dimension of transferable skills
1997	Serious problems of cost of fieldwork to both Departments and students combined with even larger classes <ul style="list-style-type: none"> ♦ the future? ♦ 'virtual reality' to assist with field courses ♦ but will 'virtual reality' be any cheaper or ever be as satisfactory?

CUMULATIVE

Figure 3. Changing approaches to fieldwork in Geography 1950-97 [29]

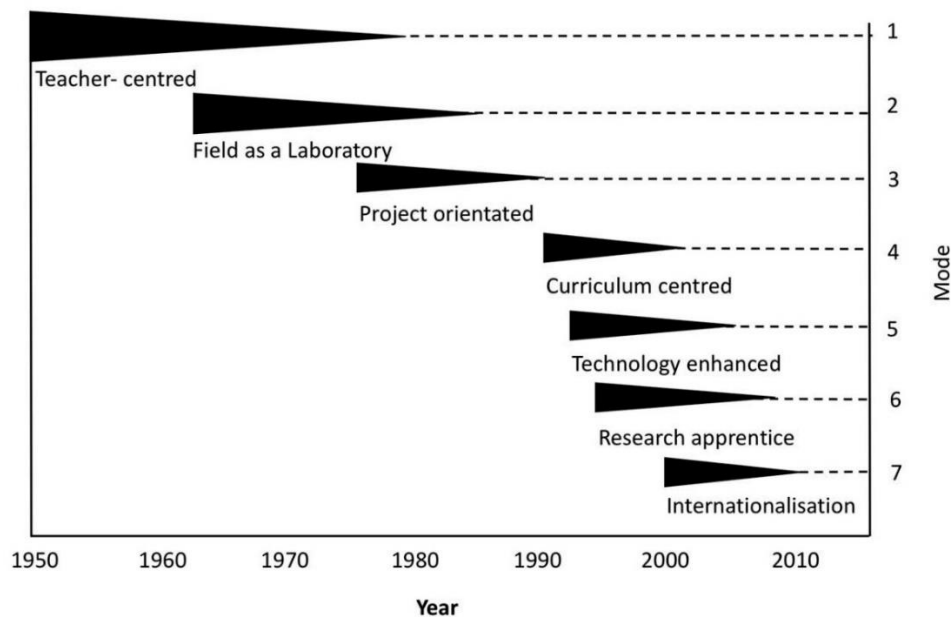


Figure 4. Seven primary modes of fieldwork in Geography [18]

The development of the contemporary debates can feed into the conservation pedagogy [12] [18] [19] [44]. When perceived as a passive rather than active learning method in the 1990s, Fuller et al [19] examined four case studies in New Zealand, questioning its effectiveness and promoted a reorientation, like the allocation of small problem-solving exercises in smaller groups instead of the entire class, a shift that occurred in other regions like the UK. The critical review on fieldwork methodology in UK universities since the 1950s by Kent et al [29] and more recently France and Haigh [18] supported this argument (Figs. 1 and 2), placing special emphasis on direct staff and student involvement, highlighting the importance of students progressing from dependent to autonomous.

The value of fieldwork in student development was observed by Smith [46] in three categories: outdoor pursuits, outdoor studies, and personal and social development. The first in particular can provide the students with awareness of their environment through physical experience outside the classroom. 'Outdoor studies' then promote the acquisition and application of new knowledge in a specific context, stimulating intellectual development. Furthermore, as pointed by Foskett, it also stimulates "the development of personal geographies often identified as the development of a 'sense of place', which then demands student participation in 'place', both in familiar and unfamiliar environments [16]. Finally, personal and social development is about social responsibility and capability in working collaboratively [16], further supported by Fuller et al [19] who see fieldwork bringing students and staff closer in the study of a subject.

On the other hand, a critical study of fieldwork as a pedagogical approach [24] shows it may be 'under-theorised' as sometimes is supported by particular circumstantial experiences rather than being 'objective and research based' [39] [17].

5. Enhancing fieldwork pedagogy in conservation

5.1. *Learning from the experience in Quibdó*

Reflecting on the Quibdó workshop now can map these observations to conservation fieldwork pedagogy. The full range of engagement that was stimulated by students and tutors produced conservation skills and understanding of the buildings values among them, raising heritage awareness. The analysis of Casa Copete and Casa García for example (Fig. 2) was extensive, driven not only by the measured and historical survey, but also design considerations like materiality, leading naturally to rich conservation proposals.

This timber heritage is quite fragmented now across the city (only 10-15 properties of architectural value identified), while the timber-board techniques used are still popular in minor modern buildings. Having to concentrate on their particular architectural merit and role as remnants of the urban architecture before the 1966 fire, revealed them to the students as an important layer that is obscured by the unregulated concrete architecture that followed since (Fig. 1). This may eventually enrich critical associations in their design projects [7] with renewed awareness of less visible cultural and urban contexts, and better reading of their fragments, as expected by fieldwork activities [14].

Framing this learning experience into the contemporary debate on fieldwork [12] [44] demonstrates that the allocation of problem-solving exercises in smaller groups [19] promotes more active engagement, which can then be effectively enhanced by direct tutor input [18]. The final presentations and discussion forum confirmed the students have become more confident, with new skills in building and condition surveying, while their many independent ideas demonstrated how the chosen fieldwork methodology stimulated their autonomy in critical thinking.

The Edinburgh team supported students with the selection of case-studies and conservation learning material, leaving the students free to set priorities in the fieldwork (i.e. identification and mitigation of building pathologies). Their engagement showcases Smith's appraisal [46] of fieldwork values in outdoor pursuits, outdoor studies, and personal and social development. Enhancing these intrinsically connected attributes in the broader UTCh curriculum can produce transferable skills for the students personal and social development. More fieldwork even beyond conservation can streamline their current irregular critical engagement with the city's context and provide focus on research to relevant areas (timber, bioclimatic architecture, urban habitat), building up curiosity and critical spirit.

To create a more sustained teaching capacity in conservation and fieldwork at UTCh, a broader context should be set up, like a circle of conservation specialists and resources in the library. A professional heritage framework also has to be set up in Quibdó (heritage listing and its enforcement, update and focus of the Local Land Management Plan (POT- *Plan de Ordenamiento Territorial*), tourist routes). Creating a newly trained generation can make a fresh start for the city to subscribe confidently into the shifts of emphasis across Colombia in the last 30 years [1] towards critical approaches to historic modifications and the creation of architectural experiences. These aspects instinctively affected the students' reaction of making the buildings relevant to their design practice and generated thoughts of expanding the canon of conservation into architecture associated with contemporary preoccupations, like the recently ended armed conflict. Such engagement can create a strong "historic conscience" in the students' approach to the urban environment of Quibdó.

5.2. Enhancing fieldwork in conservation education

The workshop in Quibdó as also many of the courses discussed follow a linear, positivist model of knowledge transmission, e.g. lectures up-front frame the fieldwork. A dimension of learning is to develop attunement with its subject [24] and this can be enhanced by fieldwork when seen as learning with and from those who take part. This can be designed into inverted-classroom environments [23] where students contribute conservation issues in the lecture after exploring them in fieldwork rather than receiving them as content beforehand. Subsequently, learning can become more contextual and unmediated, with some uncertainty, not exclusively about data collection, allowing 'mis-readings' that can creatively change ideas, theories and practices when transplanted to different conservation fields [27].

This deeper engagement with the architectural values of sites can direct conservation learning towards seeing "the existing" as more than "existing building," experiencing the essence of a place in its current and historic dimension more directly, eventually even appreciating better the practice of historic techniques. Eventually students will be more motivated to develop their own personalised contexts and geographies as they can make stronger a building's bond with modern living.

There is enough time in PG programmes to align theory and applications, and practice some across the discipline's different facets. An example is a refreshing open discussion on design interventions and the technical choices guiding them that was planned for the very end of the lecture series in Conservation Technology in ESALA [9]. This was felt to be the right moment, when the students have become conversant enough with the issues. The students of this course appear often "conservative" during coursework, showing efficient engagement but restrained creativity or curiosity in the repair or intervention stage. Introducing therefore critical inquiry earlier through unfamiliar situations that disturb passive learning may lead to stronger appropriation of the field and personal discoveries.

Aspects where learning in conservation should focus more in the future are openness to the reality and uncertainty of the information a site produces, and ability to assign them meaningful priorities [25]. Due to the range of student background and the orientation in professional skills, the transformative processes the UG Geography or Architecture curricula cultivate cannot apply in full at PG level. Short, intensive fieldwork exercises was shown in this paper they can deliver their own pedagogical methods and produce experiential, student-led learning that can open a critical inquiry, letting a site's conditions shape this learning. One way can be to introduce them like modules within bigger courses, for small groups, but can be resource-demanding. The ESALA MSc has 80 out of the 120 taught credits based on fieldwork and alternatively a common denominator can be established early on by setting up a transverse site exercise that can encourage students' curiosity in exploring the historic environment in Edinburgh and develop their critical awareness and self-motivation. This may make then teaching surveying skills much more cost-effective and frame them in the discipline's context.

Vice-versa, UG Architecture students can be more effectively induced to conservation through fieldwork, with a minimum of clearly identified theoretical and technical context introduction, letting the field become another area of the portfolio of critical inquiries they build up through their studies design explorations.

6. Conclusions

The observational participatory staff-guided workshop with final-year students in Colombia was an educational opportunity for reflection on fieldwork as pedagogical tool in the field of

conservation which enabled subsequent reviews of other experiences in the learning spectrum. The reflection showed two areas where fieldwork learning can be enhanced beyond technical skills or data collection: 1) as an intensive activity to introduce students to the field and 2) a further opportunity to develop strategies that increase critical inquiry and ownership in learning.

Fieldwork can be enriched along these lines by the more matured activities of the UG Architecture and Geography curricula that teach how to discover the existing or study its agents and cultures, and link them to patterns in the natural environment. Such activities can improve conservation students' ownership of their learning and their progression as autonomous investigators [42].

Linear patterns of learning can be inverted through fieldwork to nourish conservation students' closer engagement with a site's data and conditions, enriching their learning experience but also preparing them better to handle the unexpected in professional projects. Personal development and experience of a site's essence can be promoted, through mixing the primary data collection with less structured ways to form personal narratives of a site's conditions. This could even lead to the creation of their own innovative instruments or simulation methods to understand a pathology type or an environmental response.

UG Architecture programmes are long enough to build up critical inquiry and technology skills, and can introduce students to conservation through design units. One-year PG programmes though need to create quickly a learning environment and experience, so there are benefits of early intensive fieldwork before delivery of content to orientate students firmly into multi-disciplinary practice in a holistic way. The intensity of this engagement can expand on what Christophe Girot observed, a fieldwork learning experience should ultimately nourish the impact of that singular moment of the first encounter with a site.

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